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AN ANCIENT BLOCK-PRINT FROM KHOTAN.

BY

A. F. RUDOLF HOERNLE, PH.D., C.I.E.

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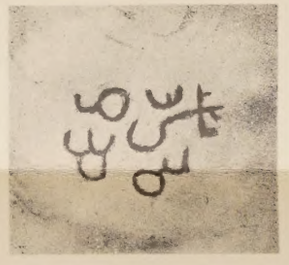
FIG. 1

BOX. TWO-FIFTHS SIZE

FIG. 2

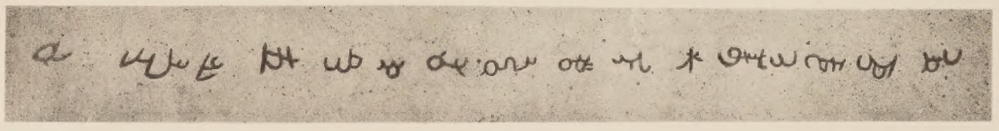
DEVISE. FULL SIZE

FIG. 3



SHORT LEGEND. FULL SIZE

FIG. 4 LONG LEGEND. TWO-FIFTHS SIZE



CARVED BOX FROM KHOTAN.

ART. XIV.—*On an Ancient Block-print from Khotan.* By A. F. RUDOLF HOERNLE, Ph.D., C.I.E. With two Plates.

IN December last I received from Captain H. H. P. Deasy a small cylindrical box containing a block-print, which, as he wrote to me from Yarkand in April, 1899, he had obtained, apparently, not long previously in Khotan.

In general appearance the box (see Plate I) much resembles one which belongs to the British Collection of Central Asian Antiquities, and which I have described in my Official Report. (See Journal, Asiatic Society of Bengal, Extra-Number for 1899, p. 108 and pl. xv). Captain Deasy's box is rather larger. Its measurements are: height, $7\frac{3}{8}''$; diameter at mouth, externally $4\frac{5}{8}''$, internally $3\frac{3}{8}''$; thickness of wall, $\frac{5}{8}''$; diameter at bottom, externally $5\frac{3}{8}''$, internally $4\frac{1}{8}''$, the wall sloping slightly upwards; thickness of projecting figures, $\frac{1}{4}''$. It is made of wood, and turned out of one piece. The wall is cracked in two places, close to each other, one crack extending right from top to bottom. All edges are rounded off; there is nothing sharp-cornered in the whole box. Round the bottom of it there runs a band, projecting $\frac{1}{4}''$ and about $1\frac{3}{4}''$ high, incised with an inscription which runs round three-quarters of the circumference, just avoiding, fortunately, the two cracks, which go through the blank one-fourth. On this band, as on a platform, there stands out, from a countersunk surface, a row of eleven rudely carved human figures, placed close together, and just filling the whole of the circumference. They only

differ in the arrangement of their arms, which is as follows, beginning on the right of the longer crack :—

The first, fourth, and eighth men have their arms hanging straight down.

The second and tenth men hold their hands over their stomach, the (proper) right above the left.

The third holds them similarly, but the (proper) left above the right.

The fifth, seventh, and ninth have their (proper) right hand placed on the stomach, and their left arm hanging down straight.

The sixth holds himself similarly, only reversed, the left hand on the stomach and the right arm hanging down.

The eleventh has only one arm, the (proper) left, which hangs down straight. There is nothing to show that the eleventh figure ever had a second arm; the second (shorter) crack runs up, from the bottom of the box, to its neck, through the countersunk space upon which the missing arm would have stood; but there is no mark of any fracture to be seen.

The cranium of the second, seventh, and ninth figures is marked with parallel incisions to indicate hair. On the remainder of the figures these marks are omitted, the cranium being left quite smooth, like the rest of the body of all the figures. The bottom of the head of the second figure is marked with similar strokes to indicate a beard.

Over the heads of these figures, there is a series of five roughly circular knobs, with a diameter of about $1\frac{1}{8}''$. They are placed, at equal distances, above and between the heads of figures 1 and 2, 3 and 4, 5 and 6, 7 and 8, 9 and 10. Above the eleventh figure, there is no knob. Accordingly there is a longer blank interval, of about 4″,

Formula I (IX^1)

1

2

Fig. XI

Formula II (IX^2).

3

4

Formula III (IX^3)

5

6

Formula IV (IX^4)

7

8

Formula V (IX^5)

9

10

Formula VI

11

Formula VII

12

Formula VIII

13

Formula IX

14

Formula X

15

del. R. Hoernle.

FACSIMILES FROM A BLOCK-PRINT FROM KHOTAN.

in the countersunk space, between the fifth and first knobs, corresponding exactly to the blank interval in the band below the figures, where there is no inscription.

The faces of the knobs are carved as follows: No. 1 with an inscription, Nos. 2–4 with human features, and No. 5 with the device or monogram (shown in Plate I, fig. 2) which is also found in certain pages of the block-print book. The lower part of the face on No. 4 is also marked with strokes to indicate a beard; these are wanting on the two other faces.

The box has no lid, nor does it appear to have ever had any. It is a regular *capsa*.

The long inscription (Plate I, fig. 4) at the bottom of the box consists of fifteen (or perhaps sixteen) words, written in characters which resemble Uigur.

The short inscription on the knob, written in the same characters, and apparently consisting of four words, is shown on Plate I, fig. 3. The device on the knob is shown in the same Plate, fig. 2, also on Plate II, fig. 11.

The block-print measures 8 × 5½ inches. The lines run parallel with the narrower side, and there are from nine to nineteen lines on a page, though the usual number varies between twelve and sixteen. They also vary very much in length, and are often printed disorderly, both in point of direction (being out of parallel) and interval. The material is paper, of the same kind as that on which the books and rolls of the Ninth Set of the British Collection are printed. (See my Report, pp. 47, 109, 110.) It is a very thin, almost transparent, tough paper, of even texture, and of a yellowish or creamy tint. The first leaf is torn in two; of four other leaves (Nos. 5, 44, 45, and 70) about one-quarter is torn away and missing. Altogether there are seventy-two leaves, all separate; therefore 144 pages. Printing commences on the second and ends on the last page. There is, however, inside the book a page, the 44th, which is blank; and it is, therefore, probable that the leaf to which it belongs, the 22nd (= pp. 43 and 44), originally formed, or was intended to form, the end of the book, and has only been misplaced

in binding the book. For one would naturally suppose the book to commence and end with a blank page, as is the case with the similar books of the Ninth Set of the British Collection. The book is bound with three stitches, along one of its narrow sides, so that it opens like a European book. The material used in stitching is thickly crusted with muddy sand. It is either a skein of thread, or a squashed piece of split reed or of some other fibrous plant. In many places the book is almost illegible. This is partly owing to the circumstance that all the leaves are covered with a very thin muddy layer of fine sand, in which the book with its box had evidently been buried for a long time. The sand can be washed off; when this is done, the print, which is made with an indelible ink, is seen more distinctly. But the print itself in many places is very indistinct, the reason apparently being that on account of the extreme tenuity of the paper the type-block was only applied to it with the lightest of pressure to prevent the impression showing through on the reverse, the result of which was that the finer lines of the type often did not ink the paper. On the other hand, occasionally the pressure was so strong that the outlines of the type are not only blotched on the right side, but show through on the wrong side of the paper. As the text consists of formulas which are repeated over and over again, it is possible by a careful comparison to determine, with much probability, the correct form of each symbol. It is in this way that the facsimiles, which are shown in Plate II, have been prepared by me with the help of tracing-paper.

The text printed in the book consists of fifteen lines, as shown in that Plate. Of these, *primâ facie*, lines 1–12 present the same script, while lines 13 to 15 appear to be in a different script. Accordingly there would seem to be two different scripts represented in the book.

Lines 1 and 2, 3 and 4, 5 and 6, 7 and 8, 9 and 10 are always found printed in conjunction, except when occasionally a line stands by itself near the margin of a page, and where evidently the companion line is simply omitted for want

of space. These lines, accordingly, form pairs, each of which constitutes a separate formula. The two lines, 11 and 12, do not form a pair; they are always printed separately: thus, on p. 18, line 11 is printed six times along with lines 1 and 2 (i.e., with formula i); and on p. 95, line 12 is printed five times, along with line 13, also five times. The three lines, 13–15, also, are always printed separately. Accordingly the five lines, 11–15, constitute five different formulas. Altogether, therefore, the fifteen lines make up, between them, ten separate formulas.

From this circumstance it may be assumed that the text of the book is printed from ten separate type-blocks, one block for each of the ten formulas. This conclusion is confirmed by the fact that the symbols which constitute the double-lined formulas i to v always stand in exactly the same relative position to one another, as I have ascertained by measuring the intervals between the lines of a pair as well as those between the several symbols of each line with a pair of compasses. It is clear, therefore, that there must have been five blocks, carrying each two lines of type, and five other blocks, each carrying only one line of type. That no single page is printed from one single block, is apparent from the fact that the arrangement of the lines (or formulas) is not alike on any two pages. The following are typical cases to illustrate the apparently planless way of distribution of the formulas over the pages :—

TABLE I.

No. of page.	Lines on page.	Lines of formulas.																		No. of formulas.	Total lines of formulas.	Total lines on page.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
120		14	15	14	15	13	13	11	11	12	1	2	3	4	9	10	...	...	...	...	8	11	15
122		6	5	7	8	7	8	4	3	14	15	12	13	14	8	7	13	15	...	...	7	10	17
128		13	7	8	15	15	1	2	12	7	8	13	11	11	13	...	...	...	...	...	6	9	14
110		11	11	3	4	1	2	13	13	13	9	10	9	10	...	...	...	...	...	...	5	8	13
25		14	13	5	6	14	11	15	14	13	13	13	13	12	...	...	...	...	...	...	6	7	13
102		6	5	6	5	14	6	5	14	2	15	6	5	15	6	5	13	...	...	...	5	6	16
132		15	15	14	14	15	14	14	13	11	11	14	12	15	12	15	12	...	...	...	5	5	16
16		5	6	5	6	5	6	14	5	6	14, 15	5	6	15	5	6	...	...	...	...	5	4	15
77		13	13	13	13	15	14	15	14	13	15	14	13	15	14	13	13	14	13	13	3	3	19
57		14	15	14	15	14	15	15	14	15	14	15	14	15	14	15	14	15	14	15	2	2	19
60		13	13	13	13	13	13	13	13	13	13	13	...	...	...	...	...	...	...	...	1	1	11

All the ten formulas are never printed on any single page. The highest number that I have noticed on any page is eight, and the lowest, one: see pp. 60 and 120 in the preceding table. Between those two extremes the number constantly varies. There is only one other page in the book which contains but one formula, viz. p. 92, and it is again the eighth formula (l. 13) which is there given. There are only six pages (2, 6, 18, 57, 89, 96) which give only two formulas, viz., formulas iv and vi, or iv and ix, or vi and viii, or vii and viii, or viii and x. I have noticed only one page with eight formulas, viz. p. 120, which gives formulas i, ii, v, vi, vii, viii, ix, x; and there seem to be only three pages (111, 122, 128) which contain seven formulas, viz., formulas i, iv, vi–x, or ii–iv and vii–x, or i, iv, vi–viii and x. The formulas which occur most frequently are Nos. iv (ll. 7, 8), vi (l. 11), vii (l. 12), viii (l. 13), ix (l. 14), and x (l. 15). Formulas ii (ll. 3, 4) and v (ll. 9, 10) are found very exceptionally; the former occurs only fourteen times, the latter only twelve times, in the whole book. Formulas i (ll. 1, 2) and iii (ll. 5, 6) are also of rather rare occurrence; the former is found twenty-three, the latter forty-two, times. Formulas vi–x are peculiar to Captain Deasy's book; so is the monogram or device (Plate II, fig. 11) which appears on a certain number of pages. None of these is found either in the two books or in the two rolls which are comprised in the British Collection, and which are described in my Official Report as constituting the Ninth Set of block-prints. Those four documents contain only the formulas i–v, there denoted ix^1, ix^2, ix^3, ix^4, and ix^5. They are shown in photo-etched facsimile on plate xvi of my Report, but unfortunately they can be seen only very indistinctly. They are shown much better in the Plate accompanying the present note, which is prepared from inked tracings on transparent paper.

The device (Plate II, fig. 11) is found on twenty-two pages, printed in different places on the page, as shown in the following list, in which the places are defined with reference to the inner margin of the page adjoining the binding. It

occurs in the left lower corner twelve times, viz., on pp. 6, 16, 24, 43, 53, 60, 62, 107, 114, 119, 123, 132, and in the right lower corner, twice, on pp. 93 and 103, and in the right upper corner, once, on p. 48. In the remaining cases, viz., on pp. 7, 17, 25, 36, 37, 69, 100, it is placed in the middle of the page; that is to say, on p. 17 it stands in the centre of the page, on p. 7 in the middle of the left-hand margin, and on pp. 25, 36, 69, and 100 in the middle of the bottom margin, while on p. 37 it occurs four times, side by side, along the bottom margin; in fact, seeing that the left-hand corner of p. 37 is torn away, it may have here stood five times. There is no system apparent either with regard to the number or the place. But it is quite possible that the leaves do not stand in their original order in the existing book; one leaf certainly does not stand any longer in its proper order;—what is now the twenty-second leaf (pp. 43 and 44) must, as I have already pointed out, have once stood at the end of the book; and it may be noted that its printed side, p. 43, is marked with the device. It is not impossible, therefore, that originally the position of the device may have followed some sort of serial order.

The device has some resemblance to one shown on plate iii, fig. 76, of my Official Report on the British Collection. The latter belongs to a signet ring, and is made up of four countersunk svastikas placed diagonally. One diagonal pair turns to the right, the other to the left; and the two pairs join their central arms, thus:

The lines of the first and second formulas measure $2\frac{1}{4}''$, and as the width of the page is $5\frac{1}{2}''$, it admits rather more than two impressions of the formulas, placed side by side. As a rule, there is no margin whatever. Thus a line of the page might consist, e.g., of two full impressions of the first line of the first formula *plus* a portion (say one-third) of a third impression. A similar remark applies to formulas

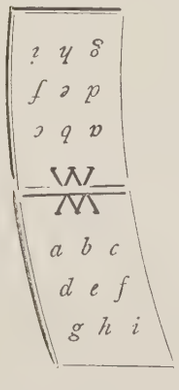
ix and x, which measure about $1\frac{7}{8}''$, and of which nearly three complete impressions go to one line of the page. The formulas iii and v measure about $3\frac{1}{2}''$, and of these one full impression and about one-half of a second go to a line of the page. It is nearly the same with formulas vii and viii, which measure $4\frac{1}{4}''$ and $3\frac{3}{4}''$ respectively. Formula iv measures $4\frac{3}{4}''$, and it only admits one full impression and two symbols of a second within the width of the page. Formula vi measures $5\frac{1}{2}''$, and with careful adjustment of the block it can only just be printed within the space of the page; not unfrequently, however, the whole or a portion of one of the terminal symbols is omitted.

There is no difficulty in determining what are the terminal symbols of each formula. The printing is not all carefully done, and when two or more impressions of the same formula go to make up the lines of the page, the terminal symbols of the adjoining impressions often overlap one another, while all the other symbols preserve an invariable fixed interval. It follows that those two symbols which overlap one another or vary in their interval, must be the terminal symbols. Moreover, in exceptional cases only one impression is placed within the width of the page, the remainder being blank; or the blank is filled up by a different formula. Thus, on p. 53, one full impression of formula iii and another full impression of formula x are placed side by side to make up the lines of the page, the two formulas between them measuring exactly $5\frac{1}{2}''$. Again, pp. 92, 104, and 105, one full impression of formula viii is placed in the middle of the page, the rest of the page-lines being blank; on p. 84 the same occurs with regard to formula x. Such cases absolutely determine the terminal symbols of the respective formulas. When once the latter are recognized, it is seen that, as a rule, the impressions are placed so as to begin near the margin of the page. This, of course, one would naturally expect to be the case; but, by itself, it is not a sufficient guide for the determination of the terminal symbols, because the printing is not done very carefully, and not unfrequently the terminal symbol or several of them have

missed printing. Thus, e.g., on pp. 104 and 120, the lines of the page are made up of two fragments of formula iv.

It is far more difficult to determine what is right and left, top and bottom, of the formulas. One great difficulty lies in the manner of the printing. The same formula is not always placed in the same position on the same page. For example, on p. 101 the first formula occurs three times; once it is placed in the position shown in the Plate, but twice it is reversed. The third formula occurs three times on p. 82, twice in the position shown in the Plate and once reversed. On p. 4 the fourth formula occurs three times, twice in the position of the Plate, but once reversed. This variation is particularly frequent in the case of formula vi. Again, the formulas do not always maintain the same relative position towards one another on different pages. Thus, on pp. 29, 79, 82, 128 both the formulas i and iv hold the position shown in the Plate, but on pp. 41, 90, 104, 121, 131 formula i stands as in the Plate, while formula iv is reversed. On p. 65 the three formulas v, vi, and vii equally stand as shown in the Plate, but on p. 85 formula v is reversed, while formulas vi and vii are as in the Plate; and on p. 120 formula vii is reversed, while formulas v and vii stand as in the Plate. I might cite numerous other instances of a similar kind, but those given will sufficiently show the difficulty with which one has to contend.

I have tried the following plan. It seems natural to assume that, in reading, the book was held as shown in the woodcut, i.e., so as to have always the opening towards the reader, and the stitched back away from him. The lines of print run parallel to the narrower side, as indicated by the letters *a b c*, *d e f*, *g h i*. At the side of the opening they extend to the very edge of the page; in fact, occasionally the edge cuts through a line of print; while at the side, near the back of the book, there is always some blank space, occasionally as much as an inch in width. This circumstance seems to point to the top of the page



being at the inner side of the book, and to confirm the assumption that, in reading, the book is held as above explained. Holding the book, then, in this position, I examined all those pages in which the formulas i, ii, iii, and v are found, which formulas, as I have already stated, only occur exceptionally in the book. The number of these pages is forty-five. I examined also twenty-six other pages, taken at random. The total of pages thus examined is seventy-one, just one-half of the total of 142 printed ones. The result of my examination is shown in the subjoined Table II, where by 'upright' position is meant the position shown in the Plate.

TABLE II.

Number of pages in which the formula occurs.					No. of times it occurs.	
Formula.	Upright.	Reverse.	Both.	Total pages.	Upright.	Reverse.
I.	16	1	1	18	18	3
II.	7	5	—	12	8	6
III.	14	12	2	28	26	14
IV.	22	19	9	50	55	45
V.	5	6	—	11	7	7
VI.	16	11	13	40	50	37
VII.	16	9	6	31	28	18
VIII.	53	5	5	63	208	37
IX.	30	11	7	48	68	22
X.	31	11	2	44	63	17

This table discloses some very striking differences, especially in the case of the first and eighth formulas. The proportions of 1 : 16 (or 3 : 18) and 5 : 53 (or 37 : 208) clearly suggest that the reversed impressions are simply

misprints. And considering further that the whole book is printed in a most slovenly manner, it does not seem improbable that all the reversed impressions are misprints, even in those cases where the proportion between the uprights and reverses is not so striking. This table would, therefore, seem to determine what is the top and the bottom of the formulas; and they are shown in my Plate in accordance with its indications.

As to the question of what is right and left, i.e., whether the formulas commence on the right-hand side and are to be read from the right to the left, there is only the following indication. As a rule the pages are printed up to their very edges, so much so that often the edge shows half a symbol. Only in very exceptional cases there is a slight margin left blank, measuring about one-quarter of an inch. Holding the book as before explained, this margin always appears on the right-hand side. It seems reasonable to assume that the margin marks the commencement of the printing; and it follows from this indication, combined with the previously explained one which determines its upright position, that the script of the formulas must be read from the right to the left. In accordance with this finding, the symbols composing the several formulas are numbered in my Plate.

The exact number of the symbols, however, which make up the first formula is not quite certain. I have numbered thirteen in the first and twelve in its second line; but many of the symbols consist of disjointed marks, which would, no doubt, form distinct connected symbols, if the impressions were more perfect. I have not been fortunate enough, however, to discover a single instance of a thoroughly well-printed impression. My numbering, therefore, should only be taken as a provisional one. In the case of all other formulas, I believe, my numbering is practically certain. Formula ii has eight symbols in the first and seven in the second line. The corresponding numbers on formula iii are thirteen and fourteen; in formula iv, thirteen and twelve; and in formula v, thirteen and fifteen. In the second line of formula iv, the two parts of what I have counted as the

seventh symbol may possibly form two distinct symbols. Of formulas vi to x, which consist of one line each, the respective numbers are, 15, 11, 22, 8, and 11.

Of the two scripts represented in the ten formulas, that seen in formulas i to vii seems to consist of ideograms or phonograms, verbal or syllabic, rather than alphabetic characters. Thus, No. 5 in the second line of formula ii and No. 2 in the second line of formula v look exactly like a leaf; and there are also other suggestive figures. A few symbols are clearly repeated: thus, No. 7 in the second line of formula ii and No. 5 in the first line of formula iii are the same; so are probably No. 2 in the second line of formula ii and No. 8 in the first line of formula iii. On the other hand, the symbols composing formulas viii to x appear to be truly alphabetic, though I do not know to what alphabetic system they may belong.

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